ISS Payload Labels-OpNom Process Improvement Team's Findings and Recommendations

Action 56:

Review the entire End-to-End labeling, OpNom, and IMS processes to determine ways to simplify and streamline the requirements and process.

Definitions used throughout presentation:

IPLAT = ISS Payload Label Approval Team (JSC SF)

PODF = Payload Operations Data File (MSFC FD35)

PDRT = Payload Display Review Team (MSFC FD35)

OpNom = Operations Nomenclature

BITS = Barcode Inventory Tracking System (IMS label process) (JSC OC)

CEIT = Crew Equipment Interface Test (KSC VITT)

VITT = Vehicle Integration Test Team

Scope of Labels That IPLAT Reviews

- IPLAT reviews ***all labels on payload hardware that the crew will interface with (nominal operations; planned maintenance; contingency, if there's a crew interface)***. See backup slides for figures taken from SSP 57000 Appendix C.
  - This **includes**:
    - Racks: Rack IMS, Rack Name, Subrack Location Code, Rack Access Panels, Utility Interface Panel, Rack Level Control Panels.
    - Subracks: Subrack IMS, Subrack Name, control panels (switches, cable/hose ports, LEDs, knobs, etc.).
    - Non-rack front panel mounted hardware (e.g. H-Reflex, Phantom Torso, etc.).
    - Cables and hoses, loose equipment, stowage kits and contents.
  - This **does not include**:
    - Items which the crew will not interface with (e.g. internal circuit boards, etc.).
    - Labels contained within software displays. These are handled by the Payload Display Review Team (PDRT).
    - Procedures, Cue Cards, etc. These are handled by the Payload Operations Data File (PODF) Procedures Team.

What is OpNom?

- Definition of OpNom from SSP50254
  - –"The purpose of the Operations Nomenclature (OpNom) is to document methods for denoting all hardware and software and associated data referenced by operations products produced by the International Space Station (ISS) operations community. This includes Operations Data File (ODF) procedures, ground and onboard displays, mission rules, commands, messages and advisories, planning products, etc."

OpNom Table Examples
(Not a complete list for Space DRUMS)

Space-Dynamically Responding Ultrasonic Matrix System/ Commercial Center of Applications for Combustion in Space - Space Product Development

Table 1 Abbreviations / Acronyms

Abbreviation / Acronym	Full Name
SDRM	Space-Dynamically Responding Ultrasonic Matrix System
SDRM AGM	Space-Dynamically Responding Ultrasonic Matrix System Argon Gas Module
PSS	Pellet Storage System
PM	Processing Module
PC ACCESS DOOR	Processing Chamber Access Door

Table 2 Stowed and Installed Hardware

Operations Nomenclature	Part #
SDRM Ground	SD170815-01
SDRM PCEM-Power	SD170765-01

Scope of OpNom

- PODF/PDRT reviews and configuration manages all U.S. Payload (Facilities and Subracks) OpNom related documentation that supports all hardware, software and associated data that the crew may potentially interface with.
  - –This includes:
    - •Review of OpNom for compliance with OpNom SSP 50254 guidelines (during a preliminary cycle and baselining cycle)
    - •Review of OpNom in conjunction with product development (procedures and displays) to ensure that all abbreviations/acronyms are included in the OpNom main volume or in the payload specific OpNom tables
    - •Populating OpNom in MIDAS
    - •Incorporation of Payload Unique OpNom into US Payload OpNom Annex (SSP50254 Annex E2)
    - •MSFC Crew Procedure Engineers are responsible for submitting the OpNom for their payload

- Per IP agreements, all payloads operating within a US –Operated rack will follow the same processes as a US Payload.

The Old Process

- There was no previous process that integrated all aspects of Labels-OpNom. IPLAT and PODF integrated processes back in summer of 2000, but not the IMS/BITS, OZ2 Bench Review, VITT CEIT, and DDPF label manufacturing processes.

- The diagram on the next slide will show the complete picture (in one place) of all the processes related to labeling and OpNom.

ISS Payload Labels-OpNom Process Improvement Findings & Recommendations

Habitability & Human Factors (SF3)
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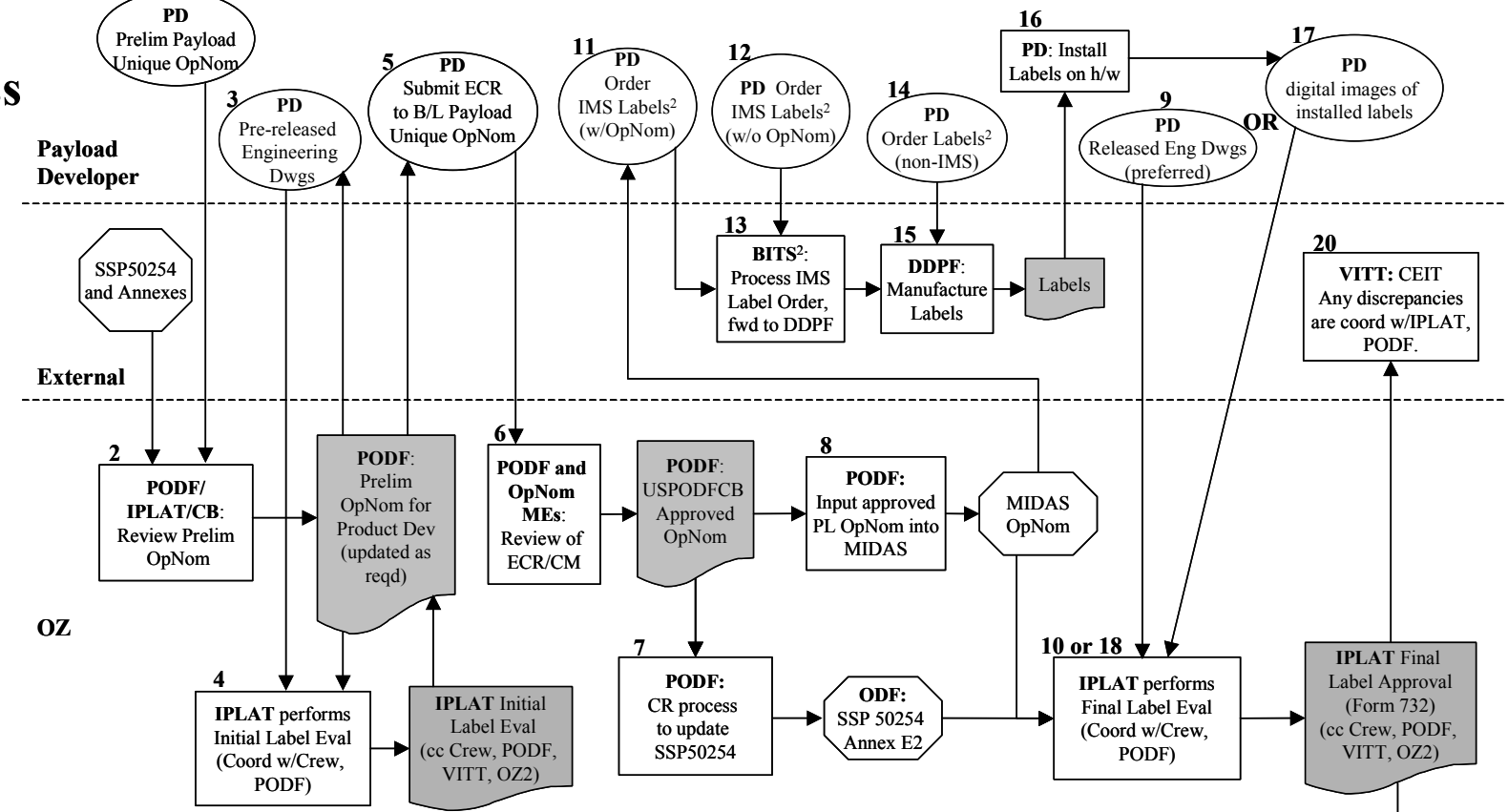
Feb 26, 2003

The New Process

Integrated ISS Payloads OpNom-Labels Process[1]



Legend:
PD = Payload Developer
PODF = PODF + PDRT + OpNom
OpNom = Operations Nomenclature
IPLAT = ISS Payload Label Approval Team
MIDAS = Mission Integration Database Application System
BITS = Barcode Inventory Tracking System
IMS = Inventory Management System
DDPF = Decal Design & Production Facility
VITT = Vehicle Integration Test Team
ME = Mandatory Evaluator
= PD inputs = process step
= Products
= ISSP product

Notes
1. Performer of each step noted in bold. Reference Integrated ISS Payload Labels-OpNom Process Table for description.
2. PDs can obtain labels from sources other than the DDPF.

The New Process And Benefits To PDs

- A step by step description of this process is provided in a table (See backup charts). Significant improvements are listed below:
  - Fewer Drawing changes: Since IPLAT is now an OpNom Mandatory Evaluator (ME), and its inputs into hardware names comes earlier, during the development of names, there is less chance that IPLAT will ask the PD to change their OpNom (and drawings) later for label requirements reasons.
  - Less Paperwork/Time Spent By PDs: Change Package Engineer (CM related function) no longer a PD responsibility. PODF will fully coordinate the dispositions of ECR comments with PDs.
  - More Responsive: Since PODF will enforce the 2 week time limit on ME comments, OpNom approval will consistently be approved within 2 weeks, not months. MEs must recognize importance of timely response.
  - User Friendly: New CM website under construction will provide status of OpNom ECRs. PD can always see status on website without digging through emails. Electronic system will have all comments as soon as submitted. Anyone can see what was approved before all actions are complete.

The New Process And Benefits To PDs

- Significant improvements (continued):
  - Faster OpNom: OpNom is now added to MIDAS faster than before, reducing delays for follow on activities (e.g. IMS label orders).
  - Improved OpNom Checking By IPLAT: IPLAT's check of labels-OpNom consistency should be smoother since IPLAT will search MIDAS; don't have to ask the PD or PODF to send IPLAT the approved OpNom files and ECRs as before.
  - Fewer Bench Review/CEIT Discovered Problems: Labels-OpNom issues being handled better in earlier steps in the process should lead to fewer, if any, problems discovered during Bench Reviews or CEITs. If a discrepancy is found, coordination with IPLAT and PODF will ensure resolution is consistent with SSP 57000 Appendix C label requirements (e.g. standardized labels) and OpNom and ODF standards.

Other Developments Helpful To PDs

- **IMS Label Ordering Process**:
  - Currently, the PDs send the BITS group Form 733 and Form 1364 (with IMS label details like OpNom), when ordering IMS labels.
  - **OC briefed the team that, in approximately May 2003, the IMS label ordering process will be performed on-line via a website**. This should simplify the interface with the PDs. They will have the ability to select whether or not they want OpNom. If they do, the OpNom will automatically be pulled from MIDAS.

- **Ordering Non-IMS Labels (Future Work):**
  - IPLAT will work with OC to possibly add a feature to order non-IMS OpNom labels and other standard Decal Catalog labels via the above mentioned website. Resource agreement would need to be worked out.

Actions and Recommendations

- The following slides contain the results and actions of the ISS Payload Labels-OpNom Process Improvement effort.

- The actions are prioritized in order of importance. Actions in the beginning will have the biggest benefit for payload developers and the process.

- Whether or not actions will be pursued will be decided at this Lean 6 Sigma meeting.

- In order to close out the overall Labels-OpNom process improvement action, all sub-actions will need to be completed by May 30, 2003.

#56-1, Add IPLAT To OpNom Reviews.

- Make IPLAT a mandatory reviewer of OpNom for all OpNom submittals (including new OpNom and changes to existing OpNom).
- Closed. ECR to PODF Management Plan to PODFCB on 2/27/03. CR to SSP 50254 to be approved at ODFCB 3/20/03.

Benefit to PDs:

- Having IPLAT involved during early OpNom development reduces chances of PDs having to modify drawings later to meet SSP 57000 Appendix C label requirements.

#56-2, Enforce Documented Process Times.

- Time limits on IPLAT, OpNom processes need to be followed.
  - In communications, make sure both sides know who must respond next.
  - Notify PD of status if cannot meet original schedule.
  - Take metrics on "touch time" to avoid unnecessary delays.

Benefit to PDs:

- More "friendly" to PDs, more responsive. Electronic CM system will enable more efficient tracking of responses and thus reduce process time.

#56-3, Handling Missing Parts In MIDAS

- Determine and baseline a process for handling missing part numbers in MIDAS. Confusion over how this problem should be handled has led to delays in IMS label orders for PDs.
  - This occurs only for parts not already manifested to fly (if they're manifested, they're in MIDAS).
  - OC is the group responsible for updating the MIDAS parts catalog when requested.
  - PODF updates the MIDAS OpNom field.
  - OZ2 configuration manages the manifest data for payloads (for parts that are assigned to a flight).
  - But it is not clear who is responsible for requesting a part, not yet manifested to fly, be added to MIDAS, and collecting the necessary info for that part to be added to MIDAS: engineering name and cage code info.

Benefit to PDs:

- Will help PDs meet schedules by avoiding delays in getting IMS labels.

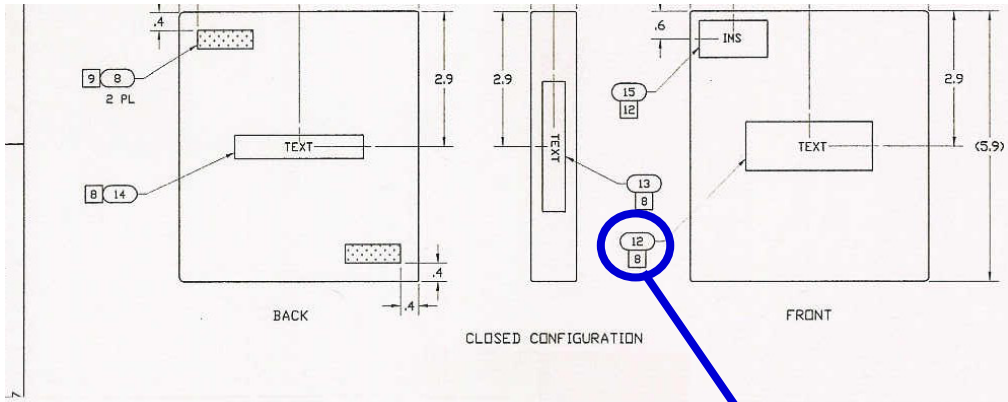
#56-4, Encourage PDs Use Drawing/Label-Spec Approach

- IPLAT take the action to encourage PDs, during process class (Action #56-6), to use the ARC approach to drawings, where the graphic part of the drawing has a label location placeholder, which is mapped to an entry in a "label-spec" table. See next two slides for example.
  - This allows for label changes (label size, font style/size, text, etc.) to be made w/o dwg changes.
  - The "label-spec" is a PD configuration-managed document.
  - Add drawing/label-spec example to website and "process class" ("roadshow").

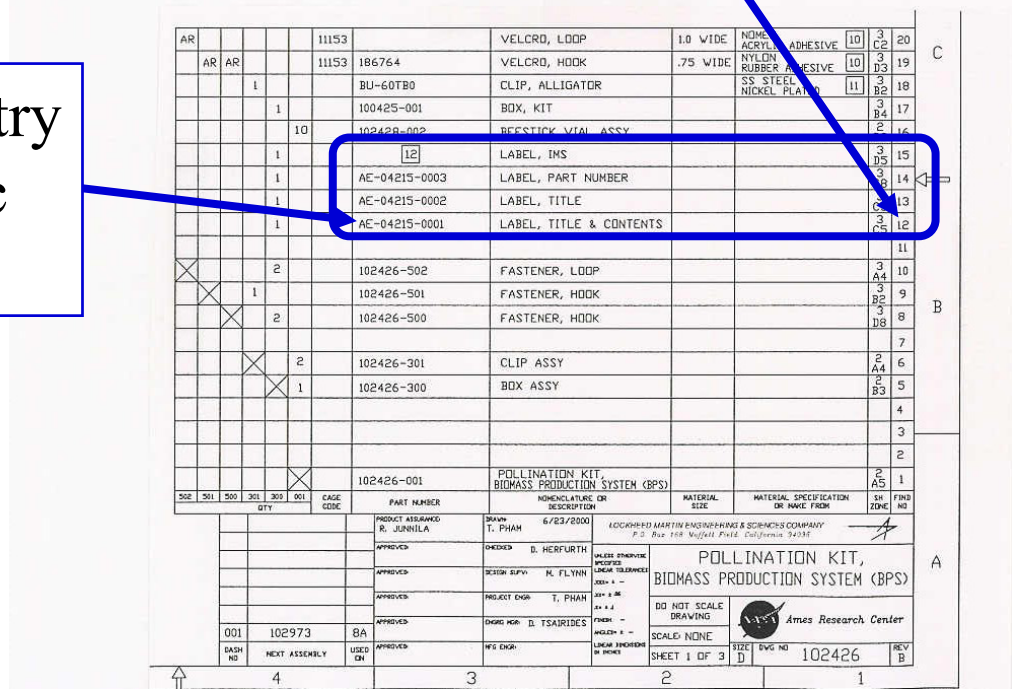
Benefit to PDs:

- Reduces drawing changes, saving PDs money.

Drawing & Label Spec Example



Points to entry in label spec (next slide)



Drawing & Label Spec Example

BPS LABEL SPECIFICATION AE-04215

AE-04215 Rev. B

TABLE 1 BPS POLLINATION KIT

LABEL PART #	ASSEMBLY TITLE	ASSY PART #	MCS #	LABEL DESCRIPTION	LABEL NOMENCLATURE	LABEL L X W DIMENSIONS (IN INCHES ±0.1)	CENTER JUSTIFIED* PRINT SIZE	PRINT COLOR	SUBSTRATE COLOR	SUBSTRATE MATERIAL PART NO.
AE-04215-0001	BPS POLLINATION KIT	102426-001	22748	BPS POLLINATION KIT TITLE & CONTENTS	BPS POLLINATION KIT BEE STICK VIALS (10) CLIPS (2)	3.4 X 1.0	LEFT JUSTIFIED 20 POINT HELVETICA= LINE 1 16 POINT HELVETICA= LINES 2 & 3	BLACK	WHITE	3M SCOTCHCAL FILM 220-10
AE-04215-0002	BPS POLLINATION KIT	102426-001	22749	BPS POLLINATION KIT TITLE	BPS POLLINATION KIT	3.4 X 0.4	20 POINT HELVETICA	BLACK	WHITE	3M SCOTCHCAL FILM 220-10
AE-04215-0003	BPS POLLINATION KIT	102426-001	22750	BPS POLLINATION KIT PART NO.	P/N 102426-001	2.1 X 0.4	18 POINT HELVETICA	BLACK	WHITE	3M SCOTCHCAL FILM 220-10

#56-5. Populate Website With Labels-OpNom Process:

- Process owners provide integrated Labels-OpNom and individual process information to John Selmarten to include in OZ website. Related to Action #7, World-Class Payload Developer Website.

Benefit to PDs:

- Reduce mystery and confusion for PDs. Makes process more friendly.

#56-6. Process Class ("Roadshow"):

- Provide info on the integrated Labels-OpNom process (related Action #9, Develop PIM Service Stds) to the person responsible for creating the process class ("roadshow") to take advantage of the new PIM concept.
  - IPLAT, PODF, PDRT, IMS/BITS, OZ2 Bench Reviews, and CEIT coordinate with PIMs to give classes on their processes.
  - Confirm deliverable dates.

Benefit to PDs:

- Reduce mystery and confusion for PDs. Makes process more friendly.

#56-7. Complete Configuration-Managed Manifest:

- Process owners need the ISS manifest (in MIDAS) to be a complete and accurate list of ALL parts, down to the lowest level, no later than L-6 months, in order for the process owners to be sure that all hardware has been properly accounted for in our processes.
- What process should be in place for those experiments that do not provide data by the needed dates?

Benefit to PDs:

- Reduce errors in processes. PDs would be asked fewer questions.

#56-8. Pre-ship Check Of Labels-Procedures-Displays-OpNom:

- HFIT (Human Factors Implementation Team) and IPLAT take the action to coordinate with PODF for a "pre-ship" labels-procedures-displays-OpNom consistency check as part of the HFIT verification activity.
- Coordination with PODF has begun.

Benefit to PDs:

- Reduce errors found at Bench Reviews and CEITs. Reduce late changes.

#56-9. VITT Coordinate With IPLAT/PODF:

- VITT coordinate with IPLAT/PODF for Crew Equipment Interface Test (CEIT) discovered label issues so SSP 57000 label requirements and OpNom and ODF standards can be ensured.
- Update CEIT/VITT process documentation to reflect this.

Benefit to PDs:

- Reduce late changes.

#56-10. OZ2 Coordinate With IPLAT/PODF:

- OZ2 coordinate with IPLAT/PODF for Bench Review label issues so SSP 57000 label requirements and OpNom and ODF standards can be ensured.
- Update Bench Review process documentation to reflect this.

Benefit to PDs:

- Reduce late changes.

#56-11. OpNom On IMS Or Name Labels:

- IPLAT modify process documentation to recommend OpNom not be on IMS labels except:
  1) If the object has no real estate for both an IMS label and a separate name label, or
  2) Cables/Hoses: IMS labels with the names will still be allowed because it reduces the number of labels getting in the way during ops.
- Recent Crew Consensus revealed the crew prefers generic IMS labels.

Benefit to PDs:

- Minimize chances of labels not matching. Some PDs still want the option to have OpNom on both IMS and separate OpNom labels, so this is a recommendation, not a requirement.

#56-12. MSFC Perform Change Package Engineer Function:

- MSFC to perform the Change Package Engineer function for all OpNom ECRs.
- Coordination with the PDs will still be done to ensure PDs agree with any comments, but tracking of the ECR throughout the CM system would be done by the Change Package Engineer/CM.

Benefit to PDs:

- Less paperwork for the PDs.

#56-13. OpNom Labels vs Vendor/Other Labels:

1) Determine if vendor/manufacturing/other labels have been confused with OpNom labels at Bench reviews, or caused any problems for the crew on-orbit. For example, answer the questions: Is it clear what is the OpNom label? Is it clear what is the IMS label?

2) Investigate the benefits of making OpNom labels have distinctive characteristics (e.g. border, shape, etc.), so that they cannot be confused with other labels such as vendor/manufacturing labels.

3) Document the rules of labeling flight stowage items-not just OpNom labels. Labels that are required are documented in SSP 57000 Appendix C, but ask the question: What other labels are allowed? Are PDs allowed to have ANY other nomenclature on their part (e.g. engineering name)?

Benefit to PDs:

- Reduce cost by reducing number of labels PDs add to hardware.
- Benefit to the on-board crew, by reducing confusion extra labels may cause.

#56-14. Label Requirements Other Than SSP 57000 Appendix C?:

- Take the action to determine what all "local" documents (e.g. JSC (PRC-9002), MSFC, ARC, GRC, etc.) and MIL-STD documents (e.g. MIL-STD-130) exist that have label requirements which may contradict or go beyond the SSP 57000 Appendix C label requirements.
- Contractors are required to follow these documents to develop h/w.
- Resolve any contradictions and/or determine precedence.

Benefit to PDs:

- Possibly benefit the on-board crew by reducing confusion (usually discovered at bench reviews) caused by extra labels.
- Minimize conflicting requirements documents, and establish a ruling document (SSP 57000 Appendix C?)

#56-15. MIDAS Info For Process Owners and PDs

- Upgrade MIDAS report generation to accommodate additional users requirements. PD/OZ community must first define specific requirements (including additional desired info) against the MIDAS tool and submit to the MIDAS team for processing. MIDAS is THE data source. This action includes researching the possibility of a report with the following info:
  - Part number, Engineering name, OpNom name,
  - IMS barcode# (when available),
  - If a part is in a kit or not (if available),
  - If the part is stowed in middeck or MPLM,
  - System/subsystems field, Hierarchy, Headers, etc.
  - Time stamps to the OpNom and part number fields should be added so viewers will know if the data is new.
  - Action: Who would define the payload system/subsystems structure, and populate the subsystems field in MIDAS for payload hardware?

Benefit to PDs:

- This list would aid both PDs and process owners. Process owners would know if they covered all the hardware. PDs would have a handy reference.
- One source for all of the information reduces duplication elsewhere.

#56-16. Release Drawings After IPLAT Initial Label Eval:

- IPLAT will recommend (during the process class) that the PDs have IPLAT perform the Initial Label Eval prior to the release of engineering drawings.

Benefit to PDs:

- This will reduce drawings changes later, reducing cost.

#56-17. Regular IPLAT Briefings To PDs:

- IPLAT coordinate with PSWG and POIWG to institute a regular IPLAT-briefing program, where PDs are regularly briefed on changes to or current issues with the labels process and given the opportunity for Q&A, and to voice concerns.
- Closed. POIWG added IPLAT to POIWG agenda.

Benefit to PDs:

- This will make the IPLAT process more friendly. Presents a complete ops story to the PD community.

#56-18. IPLAT To Fill-Out IMS Waivers for PDs:

- IPLAT fill out the IMS label waiver form, if OC thinks it is necessary.
- Document the process.

Benefit to PDs:

- The PDs won't have to fill out another form.

Misc: IPLAT Provides Label Drawing Service:

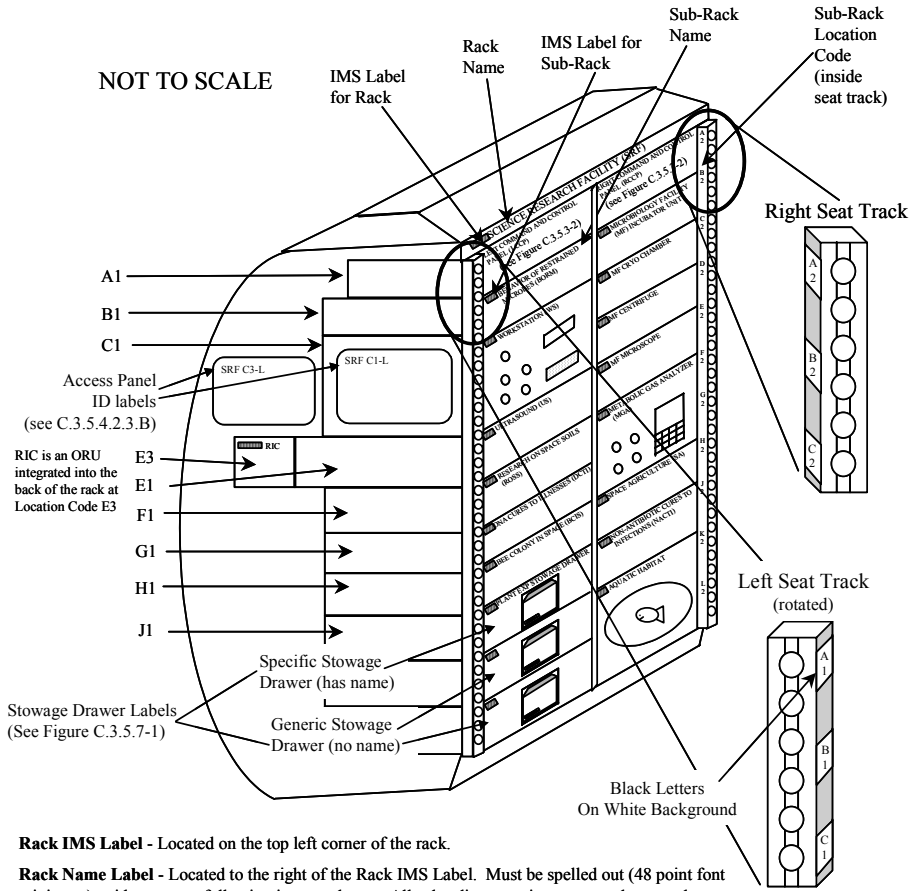
- IPLAT should continue to provide drawing assistance to PDs for labels, resources permitting.
- This is a low cost and effective solution to meeting the label requirements.
- No Action. This is an advertisement to the PDs of our service.
- Reminder: Decal Design & Production Facility (DDPF) provides labels at no cost to ISS Payloads.

Benefit to PDs:

- Saves PD money and time by having fast, free drawings and fast, free labels.

Backup Slides

Types Of Labels (Rack And Subrack)



Rack IMS Label - Located on the top left corner of the rack.

Rack Name Label - Located to the right of the Rack IMS Label. Must be spelled out (48 point font minimum), with acronym following in parentheses. All subordinate equipment may then use the acronym.

Subrack IMS Label - Located on the top left corner of the subrack drawer.

Subrack Name Label - Located to the right of the Subrack IMS Label. Must be spelled out (between 28-36 point font), with acronym following in parentheses. All subordinate equipment may then use the acronym.

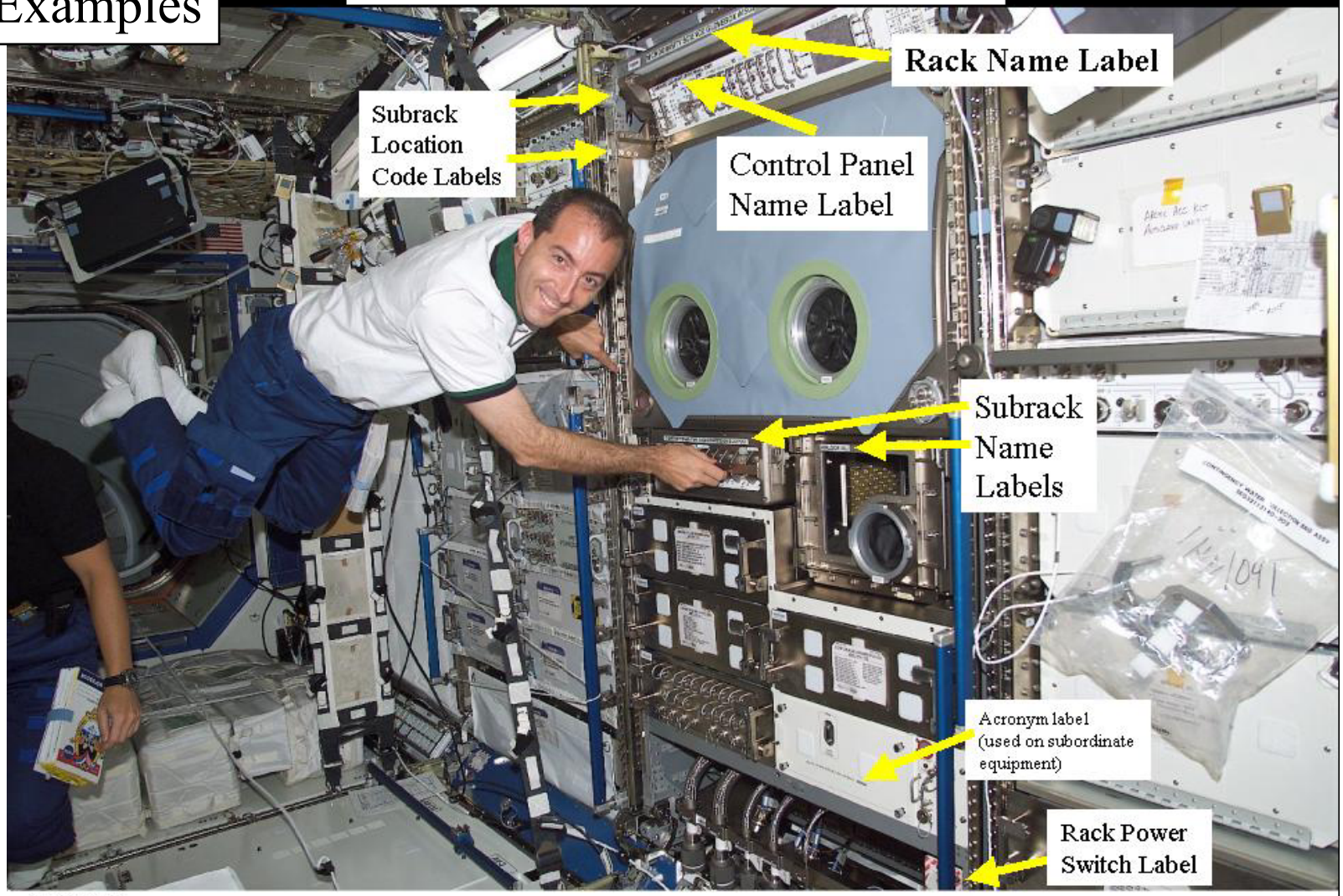
Subrack Location Codes - Located on the inside of the seat track. Letters A thru N, excluding I (18 point font). Letter/number pairs must be placed at intervals equal to the individual rack's smallest drawer unit (e.g. 4 PU (7 inches) for U.S. payloads, different for IP racks).

Note: In above figure, MF is a sub-facility within SRF comprised of 4 subracks (B2 through E2). The name is spelled out on the first subrack. The acronym is then used on subsequent subracks.

FIGURE C.3.5.3-1 RACK LABEL PLACEMENT

Examples

IPLAT-Created Labels For MSG



S111E5120

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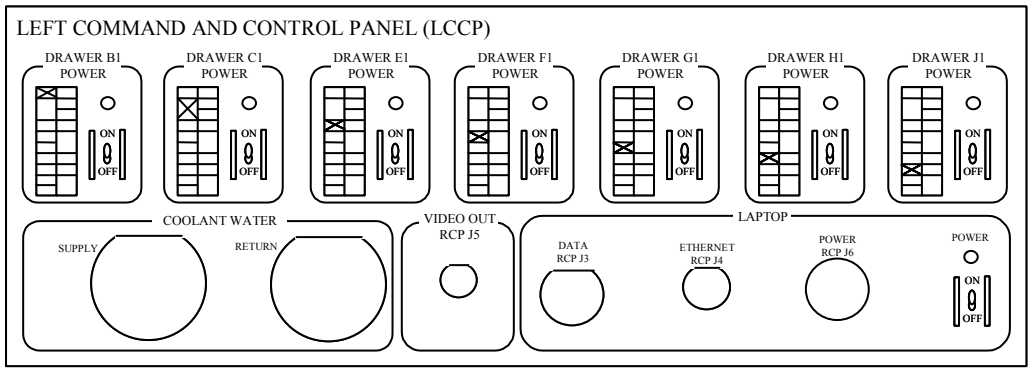
Feb 26, 2003

NOT TO SCALE

Types Of Labels (Control Panels)

This panel is at the "A1" position in Figure C.3.5.3-1:



This panel is at the "A2" position in Figure C.3.5.3-1:

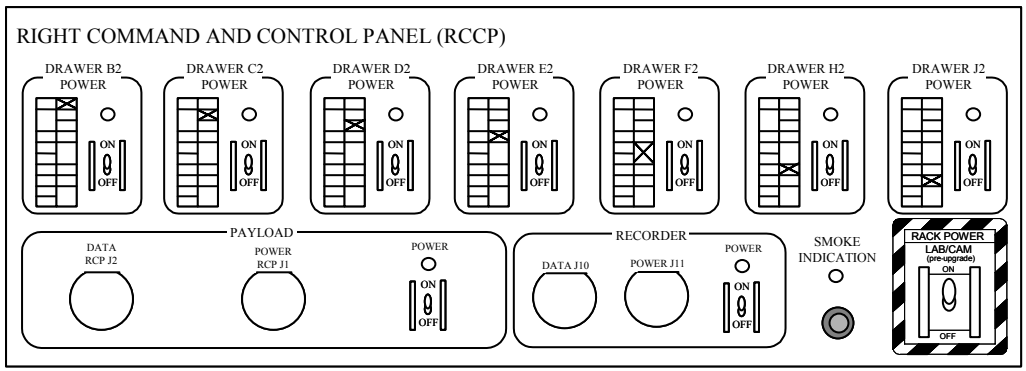
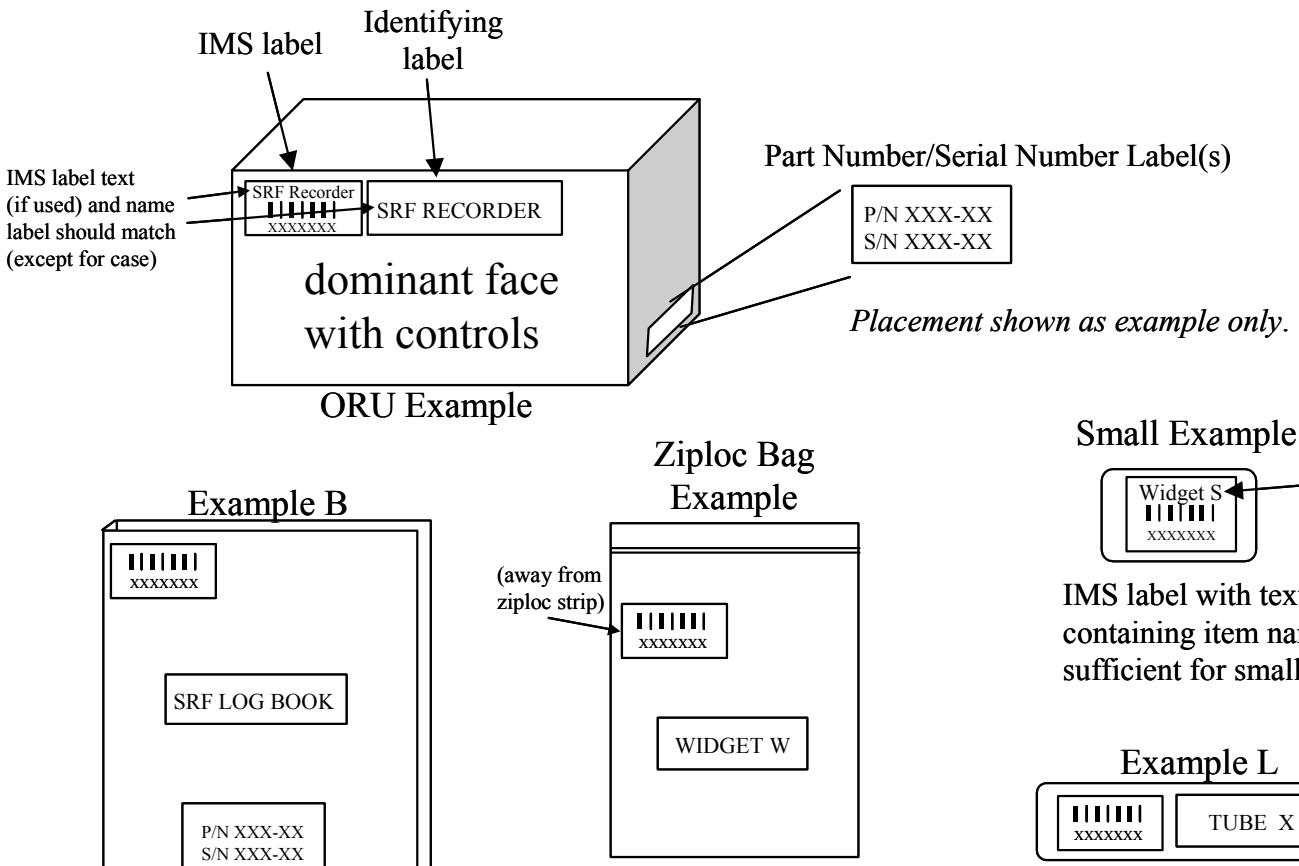


FIGURE C.3.5.3-2 CONTROL PANEL LABELING

Types Of Labels (Misc)



Note: These are guidelines for standardization purposes. IPLAT recognizes that there may be many unique cases which will not fit these examples.

FIGURE C.3.5.3-3 MISCELLANEOUS LABEL PLACEMENT GUIDELINES

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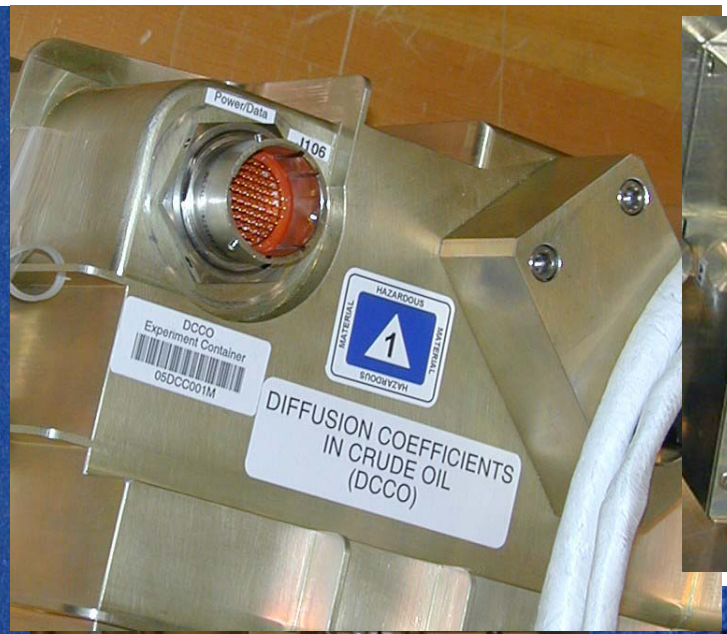

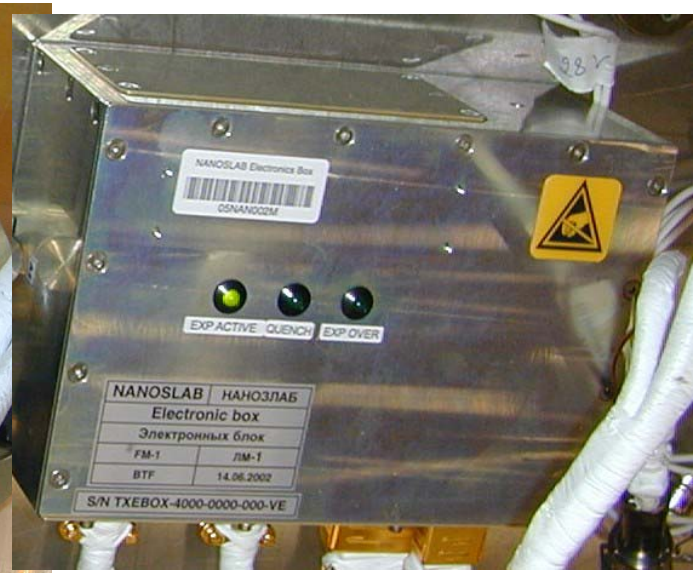

Types Of Labels (Cables And Hoses)

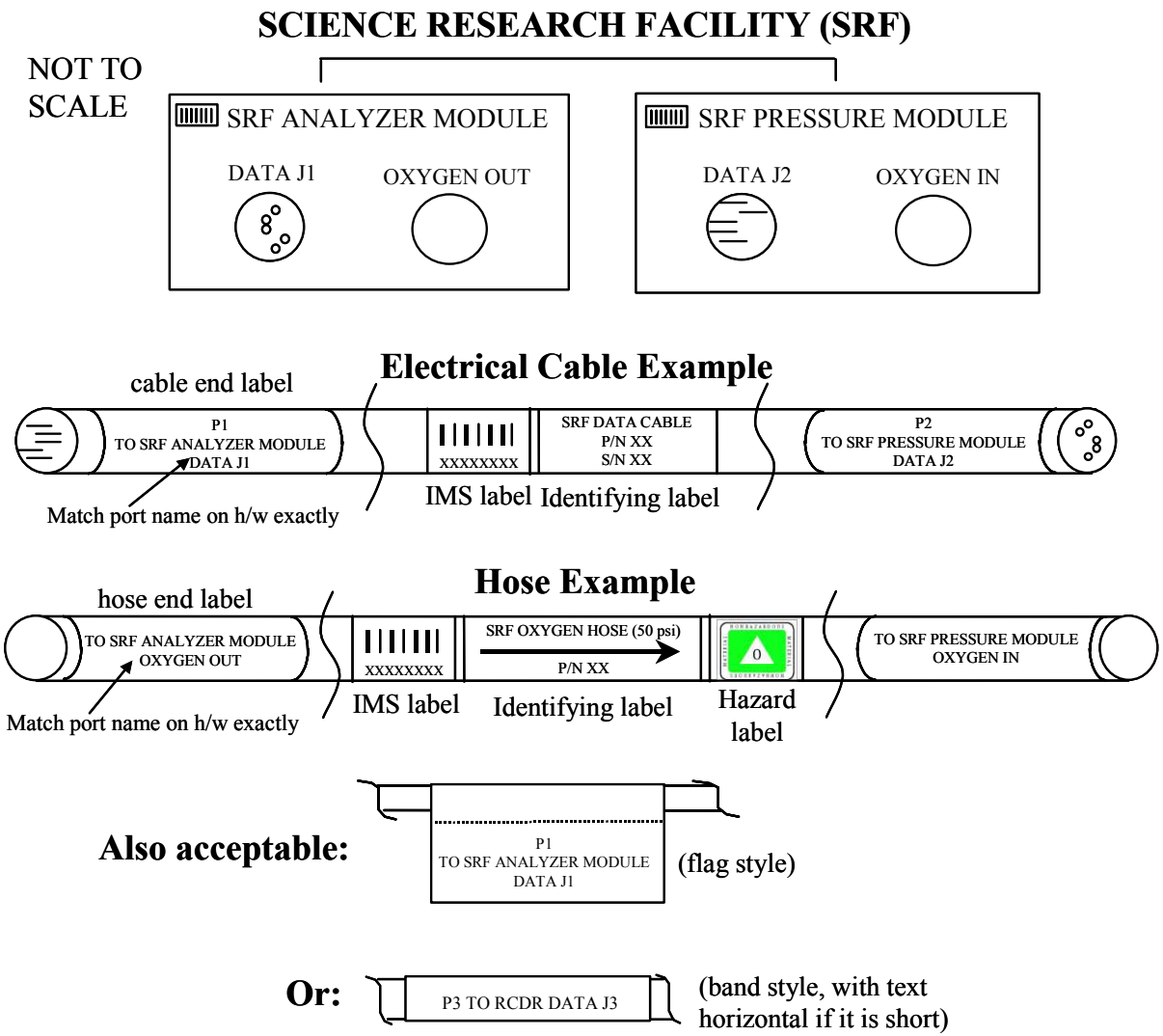

FIGURE C.3.5.4.2.1-1 CABLE AND HOSE LABELING

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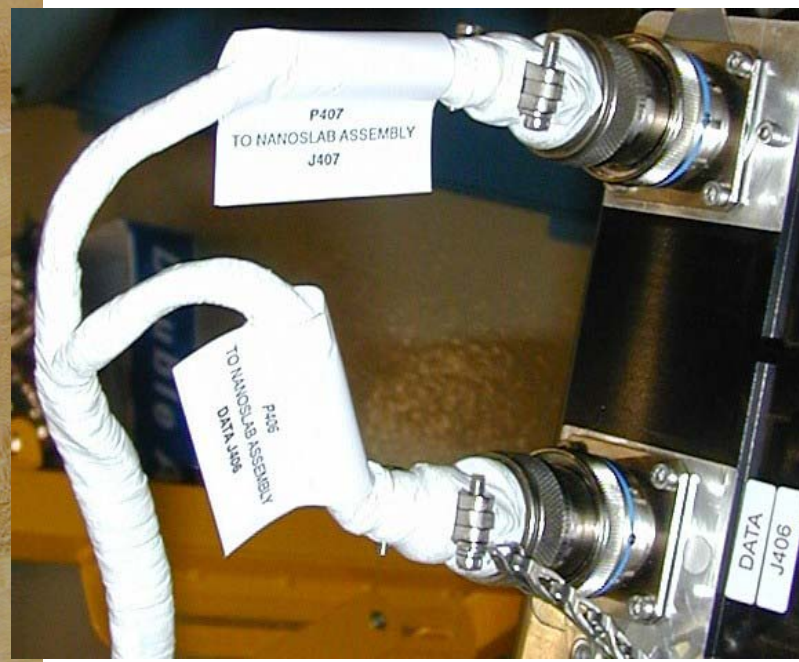


Types Of Labels (Operating Instruction Labels)

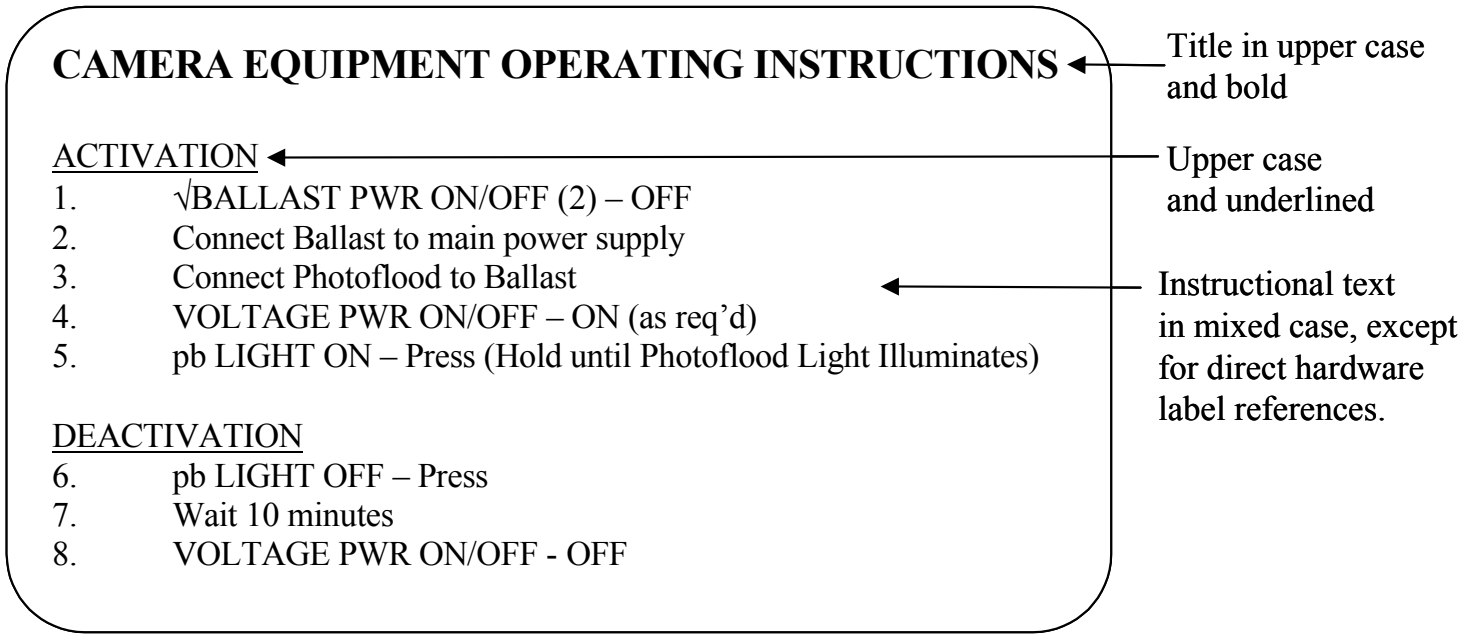
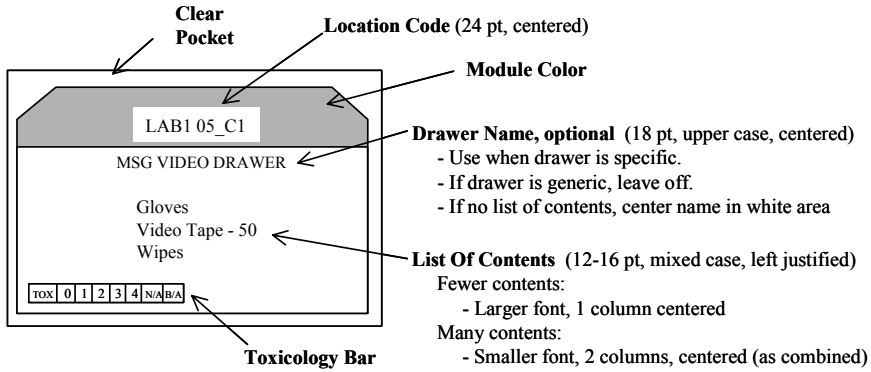
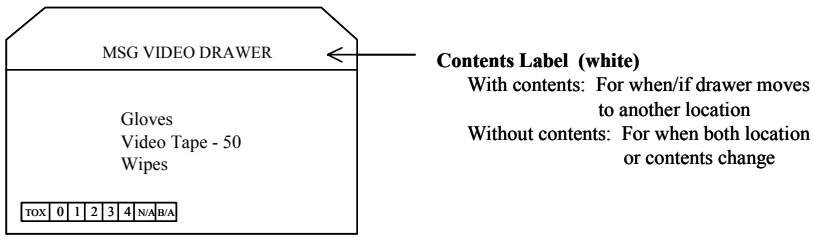


FIGURE C.3.5.6-1 OPERATING INSTRUCTION LABEL EXAMPLE

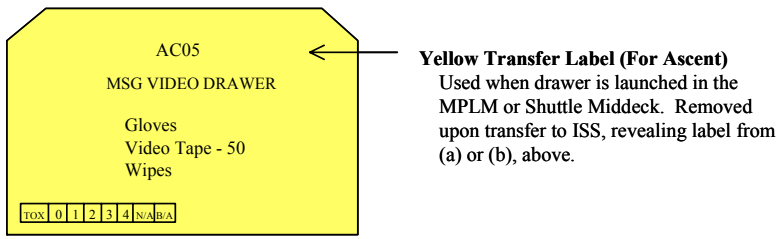
Types Of Labels (Stowage Drawer)



a) Standard Drawer Title/Contents Label - With Location Information



b) Standard Drawer Contents Label - Without Location Information



c) Ascent Drawer Contents Label

Note: IPLAT must review the proposed label. The PD can then order this label from the Decal Design & Production Facility (DDPF). Reference Drawing #SEG32106109, "Crew Transfer Bag Standard Label".

FIGURE C.3.5.7-1 STANDARD PAYLOAD STOWAGE DRAWER LABELS

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Types Of Labels (Caution & Warning)

Emergency Label Example

Caution/Warning Label Example

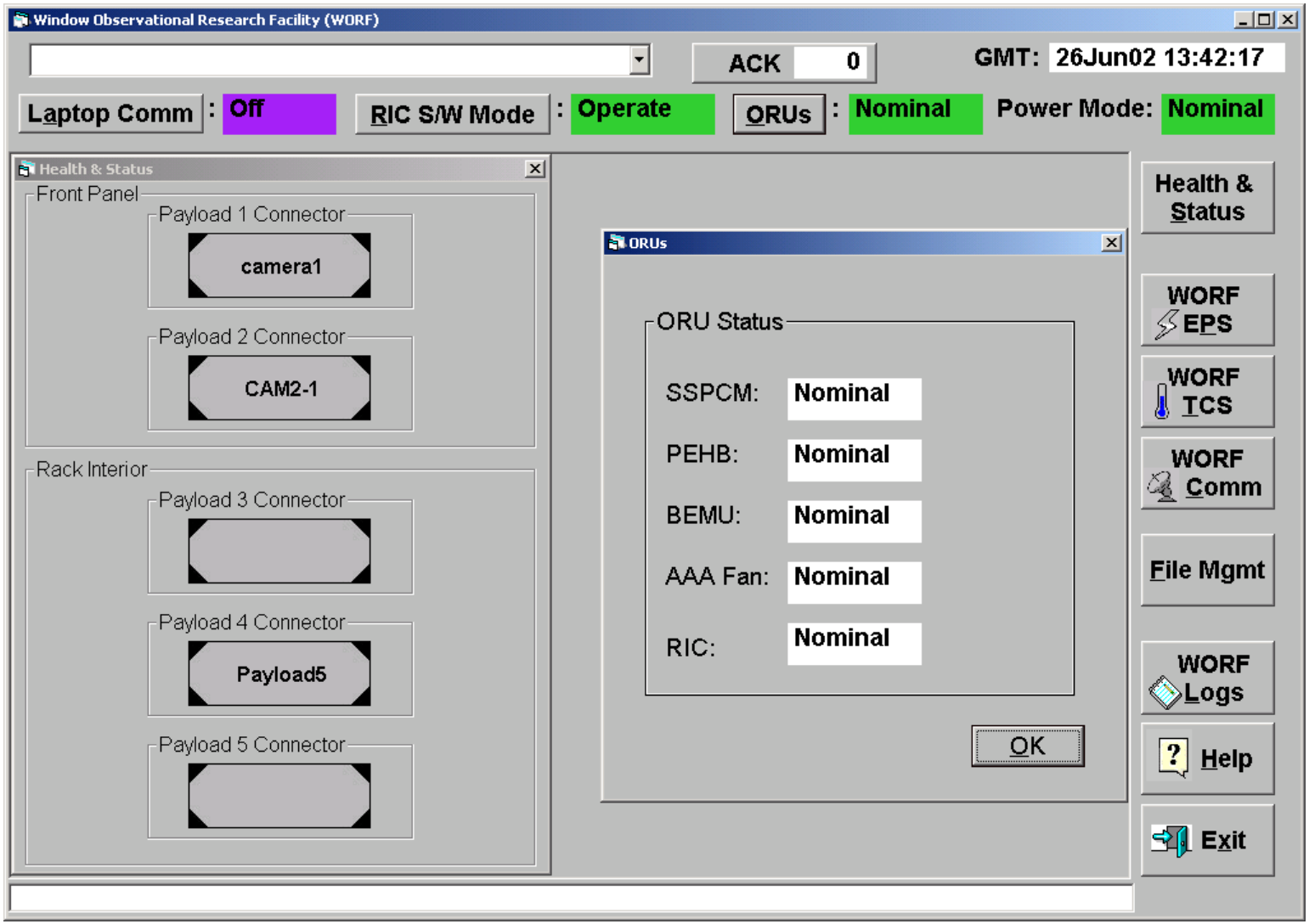
Toxic Hazard Label Examples

FIGURE C.3.5.9-1 CAUTION AND WARNING LABEL EXAMPLES


RIS 1553
PORT
RACK POWER
LAB/CAM
OFF
ON
SMOK
INDICAT
LOCKER - 8
DATA - J2
POWER - J1
J2


RACK POWER
LAB/CAM
OFF
RIU SWITCH BOX
ON
ON
OFF
OFF
MAIN PWR
AUX PWR
ORUs
9 10 2002

Payload Display Example



ISS Payload Labels-OpNom Process Improvement Findings & Recommendations

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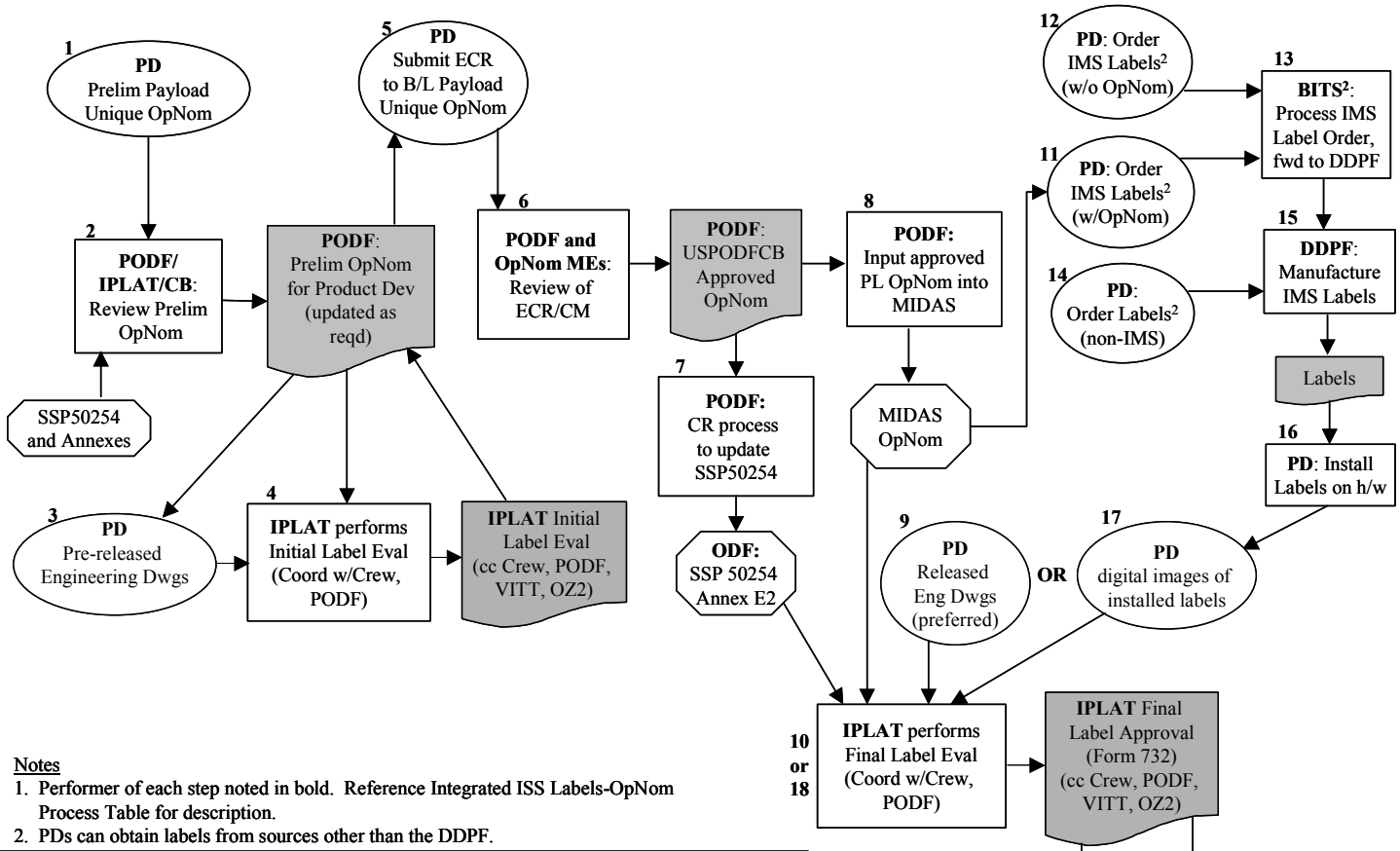
The New Process (Alternate Diagram, without "Swim Lanes")

Integrated ISS Payloads OpNom-Labels Process[1]



Notes
1. Performer of each step noted in bold. Reference Integrated ISS Labels-OpNom Process Table for description.
2. PDs can obtain labels from sources other than the DDPF.

Legend:
PD = Payload Developer
PODF = PODF + PDRT + OpNom
OpNom = Operations Nomenclature
IPLAT = ISS Payload Label Approval Team
MIDAS = Mission Integration Database Application System
BITS = Barcode Inventory Tracking System
IMS = Inventory Management System
DDPF = Decal Design & Production Facility
VITT = Vehicle Integration Test Team
ME = Mandatory Evaluator
= PD inputs = process step
= Products
= ISSP product

Integrated ISS Payloads OpNom-Labels Process Table

1	PD submits Preliminary Payload Unique OpNom to PODF.	N	N/A	N/A	Same as before.
2	PODF/IPLAT/CB: Review Preliminary OpNom. PODF reviews the OpNom against SSP 50254 standards, and the crew office reviews for operational relevancy. PODF added IPLAT as a reviewer of Preliminary OpNom. IPLAT will review the h/w names in the Preliminary OpNom against SSP 57000 Appendix C label requirements.	Y Ref. SIPOC POI-PODF-1	On web page 2 weeks after submitted *	On web page 2 weeks after submittal unless coord. with PD.	Since IPLAT is now an OpNom reviewer, and its inputs into hardware names comes earlier, during the development of names, there is much less chance that IPLAT will have to ask the PD to change their OpNom (and drawings) later for label requirements reasons. * This was published in the PODF Management Plan; however, it never was implemented last summer due to the IT security website problems at MSFC.
3	PD submits Pre-released Engineering Drawings to IPLAT for the Initial Label Evaluation.	N	N/A	N/A	Same as before. Emphasis is placed on our commitment to a single drawing repository.
4	IPLAT performs the Initial Label Evaluation. IPLAT coordinates w/Crew Office for concurrence on recommendations, and PODF as necessary for OpNom issues. IPLAT uses the Preliminary OpNom from Step #3 to check labels for consistency.	Y	2 weeks	2 weeks	Fewer drawing changes after the Initial Label Evaluation. Because IPLAT is an OpNom ME, there is a better chance hardware names on engineering drawings are in compliance with the label requirements.
5	PD submits Engineering Change Request (ECR) to baseline Payload Unique OpNom.	N	N/A	N/A	The proper electronic CM system should improve this. If implemented properly the PD will only have to fill in relevant fields and attach file. PD will not have to worry who to send the form to, etc.

Integrated ISS Payloads OpNom-Labels Process Table

6	PODF and OpNom MEs: Review of ECR/CM. PODF reviews the OpNom against SSP 50254 standards, and for operational relevancy. IPLAT will review the OpNom against SSP 57000 Appendix C label requirements.	Y Future improvements should be seen if the new CR electronic system is implemented properly.	2 weeks + grace period ---------- = 1 week review and 1 week for distribution by CM, review and disposition of comments and issuing the directive. Getting comments from MEs within 1 week period was a problem.	2 weeks plus 48 hour grace period After that the PODFCB will assume no response means approve as written, and press on to approve the OpNom.	1) Change Package Engineer (CM related function) no longer a PD responsibility. The POIF OpNom points of contact assumed that responsibility. Rita and Mercedes will fully coordinate the dispositions of ECR comments with PDs. 2) Since PODF will enforce the 2 week time limit on ME comments, OpNom approval will consistently be approved within 2 weeks, not months. MEs must recognize importance of timely response. 3) New CM website under construction will provide status of ECRs. PD can always see status on website without digging through emails. 4) Electronic system will have all comments as soon as submitted. Anyone can see what was approved before all actions are complete
7	PODF: CR process to update SSP50254 CR to submit to SSP50254 within 2 weeks after directive issued.	N Ref. SIPOC POI-PODF-3	2 weeks plus	2 weeks plus	PODFCB is no longer waiting for ODFCB approval prior to populating MIDAS. Actual hands-on time approx. 2 days to update Annex E2 once ODFCB approves CR. PODFCB action remains open until ODFCB signs the CR.
8	PODF: Input approved payload OpNom into MIDAS. If an OpNom can't be entered because the part is not in MIDAS, PODF will notify OZ2 Stowage Integration manifest team. OZ2 will quickly configuration manage the parts for accuracy, and will request that OC add part to MIDAS.	Y Ref: SIPOC POI-PODF-2	2 weeks max (PODF - Approx. 5 mins per part.); weeks longer if part missing from MIDAS Confusion as to who must request a missing part be added to MIDAS caused weeks delay	2 weeks max (PODF - most happen much sooner – hours/days); add ~2 days if part missing from MIDAS.	1) OpNom is now added to MIDAS faster than before, reducing delays for follow on activities (e.g. IMS label orders). 2) Parts not in MIDAS should no longer cause lengthy delays of IMS label orders, because under new process (still must work out all details, still open from 2/19/03 mtg), PODF notifies OZ2 of the missing part, OZ2 will quickly configuration manage the parts information and requests OC add the part to MIDAS. OC in turn quickly adds the parts to MIDAS, and PODF quickly adds OpNom to MIDAS. IMS label orders should only be delayed 1-2 days, not weeks, as had happened before.

Integrated ISS Payloads OpNom-Labels Process Table

9	PD submits Released Engineering Drawings (preferred). Drawings are preferred because IPLAT approval is good as long as the drawing is not changed. Therefore, multiple copies of hardware developed from the approved drawing do not require re-approval by IPLAT.	Y	N/A	N/A	Same as before. Committed to using a single repository.
10	IPLAT performs Final Label Evaluation on engineering drawings. IPLAT coordinates w/Crew Office for concurrence, and PODF if necessary. IPLAT uses the approved OpNom from MIDAS (Step #12) as a final check that labels are consistent with OpNom. If labels on drawings do not match OpNom for some reason (very low risk if previous steps are followed), and the name labels otherwise meet OpNom standards, are operationally relevant, and meet SSP 57000 Appendix C label requirements, the OpNom will be changed, rather than the drawing, since drawings changes are expensive.	Y	2 weeks	2 weeks	1) No drawing changes. 2) Fewer questions for the PD. IPLAT's check of labels-OpNom consistency should be smoother since IPLAT will search MIDAS; don't have to ask the PD or PODF to send IPLAT the approved OpNom files and ECRs as before.
11	PD: Order IMS Labels (with OpNom).	Y	N/A	N/A	PD enters the data once (not multiple forms) and is notified via automatic e-mail notification about status of order.
12	PD: Order IMS Labels (without OpNom)	Y	N/A	N/A	PD will have real-time feedback regarding the approved OpNom and once a P/N is entered into P/N field, OpNom will be pulled from MIDAS parts catalog. PD will still have option to add supplemental text in brackets. PD will also know immediately if P/N does not exist in MIDAS as well and can initiate action.
13	BITS: Process IMS Label Order, forward to DDPF. BITS will assign bar code numbers, or review and approve smart bar code numbers. If OpNom was requested on an IMS label, MIDAS will be checked (automatically during website IMS label ordering process) to see if label matches approved OpNom.	Y	??	??	Same benefits as above: 1. Fill in data once, not multiple forms 2. Automated e-mail notification about SR status. Real-time feedback about approved OpNom (will automatically pre-populate OpNom and label text fields) if ordering OpNom-specific label

Integrated ISS Payloads OpNom-Labels Process Table

14	PD: Order Labels (non-IMS)	Y	N/A	N/A	If the capability to order non-IMS generic OpNom/part number labels is added to OC website-based label ordering process, this will make it easier to obtain this type of label. If PD needs a custom label, they can request IPLAT create a drawing as before.
15	DDPF: Manufacture Labels	N	30 working days	30 working days	30 working days remains the nominal time for receiving labels from the DDPF. However, a large percentage of the time DDPF has been producing labels much faster than this (1-2 weeks) when PD requests due to urgency.
16	PD installs labels on hardware	N	N/A	N/A	Same as before.
17	PD takes digital images of installed labels and sends to IPLAT. Note: This is only if the PD's drawings lack the information IPLAT requires to verify labels meet SSP 57000 Appendix C label requirements. If IPLAT must perform label verification based on pictures of labels on flight hardware, then IPLAT must see pictures of all copies of hardware (e.g. all serial numbers).	N	N/A	N/A	Although it takes time for the PD to take pictures of flight h/w with installed labels, this is less expensive than updating drawings. IPLAT's goal is to ensure flight hardware is labeled per the requirements, and thus have not required drawing revisions. Note: However, drawing and flight h/w inconsistencies are flagged as squawks during CEIT/VITT review and are still an issue. HFIT and IPLAT involvement earlier is payloads design should help reduce these late errors.
18	IPLAT performs Final Label Evaluation on digital images. IPLAT coordinates w/Crew Office for concurrence, and PODF if necessary. IPLAT uses the approved OpNom from MIDAS (Step #12) as a final check that labels are consistent with OpNom.	Y	2 weeks	2 weeks	Fewer questions for the PD. IPLAT's check of labels-OpNom consistency should be smoother since MIDAS will always be used; don't have to ask the PD or PODF to send IPLAT the approved OpNom files as before.

Integrated ISS Payloads OpNom-Labels Process Table

19	OZ2: Bench Review. Any discrepancies are coordinated w/IPLAT, PODF. Include POIF stowage?	Y	??	??	1) Labels-OpNom issues being handled better in earlier steps in the process should lead to fewer, if any problems discovered during Bench Review. 2) If a discrepancy is found, coordination with IPLAT will ensure resolution is consistent with SSP 57000 Appendix C label requirements (e.g. standardized labels).
20	VITT: CEIT Any discrepancies are coordinated w/IPLAT, PODF.	Y	??	??	1) Labels-OpNom issues being handled better in earlier steps in the process should lead to fewer, if any problems discovered during CEIT. 2) If a discrepancy is found, coordination with IPLAT will ensure resolution is consistent with SSP 57000 Appendix C label requirements (e.g. standardized labels).

Consolidate IPLAT Into PODF?

- The Labels-OpNom process team considered the idea of consolidating IPLAT into the PODF function.
  - Consolidation of IPLAT into PODF would be more logical than the reverse, since PODF has many functions regarding payload operations, and IPLAT is one process.
  - None of the participating PDs favored the idea. PD comments:
    - PDs thought the better coordination, and process improvements discussed in this presentation would be sufficient to resolve existing problems.
    - Changing the process too much now would cause more harm than good.
    - IPLAT's human factors background has benefited the labeling of their hardware.
    - The distinction between IPLAT and PODF functions (including requirements documentation) are clear.
  - PODF noted that prior to the creation of the new Human Factors Implementation Team (HFIT), it would have been reasonably logical to combine IPLAT into PODF. However, since HFIT exists (and IPLAT is a subset of HFIT) and is responsible for all SSP 57000 human factors requirements, the distinction between HFIT-IPLAT and PODF authorities and responsibilities is clear. The detailed working relationship between PDRT and HFIT is being worked (Ref 56-9).